



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/691,874	10/19/2000	James A. Proctor JR.	2479.2009-000	5418
21005	7590	07/25/2006	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C.			DAVIS, CYNTHIA L	
530 VIRGINIA ROAD			ART UNIT	
P.O. BOX 9133			PAPER NUMBER	
CONCORD, MA 01742-9133			2616	

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

8

Office Action Summary	Application No.		Applicant(s)	
	09/691,874		PROCTOR, JAMES A.	
	Examiner		Art Unit	
	Cynthia L. Davis		2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/19/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed 5/19/2006, with respect to the rejection(s) of claim(s) 1-24 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the Reese reference (6226274).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 7-9, 13, 15-18, and 22-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Reese.

Regarding claim 1, a method of staggering channels in a wireless communications. Identifying a first plurality of channels dedicated for wireless communication from the wireless communications unit to one or more remote wireless communications units and identifying a second plurality of channels dedicated for communication from the one or more remote wireless communications units to the wireless communications unit is disclosed in Reese, figure 3 (showing 8 channels for receiving, and 8 for transmitting). Scheduling the first plurality of channels according to

a first predetermined cycle, and scheduling the second plurality of channels according to a second predetermined cycle, wherein each channel in the first and second plurality of channels is dedicated for communication between the wireless communications unit at a predetermined interval and a single remote wireless communications unit and, wherein the second predetermined cycle by less than one interval is out of phase with the first predetermined cycle is disclosed in Reese, figure 3 and column 2, lines 23-31 (the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Regarding claim 2, the wireless communication unit is a base station processor and the remote wireless communication unit is a subscriber access unit is disclosed in Reese, figure 1 (showing a base station and mobile units).

Regarding claim 3, a wireless communication unit operable for wireless communication with one or more remote wireless communication units via a first wireless link having a first plurality of channels dedicated for communication from the wireless communication unit to the one or more remote wireless communication units and at least one remote wireless communication unit operable for wireless communication with the wireless communication unit via a second wireless link having a second plurality of channels dedicated for communication from the remote wireless communication unit to the wireless communication unit is disclosed in Reese, figure 3 (showing 8 channels for receiving, and 8 for transmitting). A local scheduler operable to schedule the first plurality of channels for wireless communication according to a first predetermined cycle; and a remote scheduler operable to schedule the second plurality

Art Unit: 2616

of channels according to a second predetermined cycle, wherein each channel in the first and second plurality of channels is dedicated for communication between the wireless communication unit and a single remote wireless unit at a predetermined interval and, wherein the first predetermined cycle is out of phase with the second predetermined cycle by less than one interval is disclosed in Reese, figure 3 and column 2, lines 23-31 (the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Regarding claim 4, the wireless communication unit is a base station processor and the remote wireless communication unit is a subscriber access unit is disclosed in Reese, figure 1 (showing a base station and mobile units).

Regarding claim 5, identifying a first channel dedicated for wireless communication from a base station processor to a subscriber access unit and identifying a second channel dedicated for wireless communication from a subscriber access unit to a base station processor is disclosed in Reese, figure 3 (showing 8 channels for receiving, and 8 for transmitting). Scheduling the first channel for wireless communication according to a first cycle, and scheduling the second channel for wireless communication according to a second cycle, wherein each channel is dedicated for communication between the wireless communication unit and a single remote wireless unit at a predetermined interval, and wherein the first cycle is out of phase with the second cycle by less than one interval is disclosed in Reese, figure 3 and column 2, lines 23-31 (the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Regarding claim 7, the first cycle corresponds to a forward interval, and the second cycle corresponds to a reverse interval is disclosed in figure 3 (the first cycle is on the forward link, the second is on the reverse).

Regarding claim 8, the forward interval and the reverse interval are equal is disclosed in figure 3 (both are 8 slots).

Regarding claim 9, the forward interval and the reverse interval correspond to an integral multiple is disclosed in column 14, lines 64-66 (both intervals are 8 slots, so they are equal; 1 is an integer).

Regarding claim 13, a base station processor connected to a public access network and operable for wireless communication to one or more subscriber access units via a first plurality of wireless channels, at least one subscriber access unit in the one or more subscriber access units operable for wireless communication to the base station processor via a second plurality of wireless channels is disclosed in Reese, figure 3 (showing 8 channels for receiving, and 8 for transmitting). A scheduler operable to allocate the wireless channels for wireless communication at a predetermined interval, wherein each channel in the first and second plurality of channels is dedicated for communication between the wireless communication unit and a single remote wireless unit at a predetermined interval and, wherein the scheduler is further operable to schedule the first wireless channels according to a forward cycle, and to schedule the second wireless channels according to a reverse cycle, such that the forward cycle is out of phase with the reverse cycle by less than one interval is

disclosed in Reese, figure 3 and column 2, lines 23-31 (the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Regarding claim 15, the forward cycle occurs at a forward interval and the reverse cycle occurs at a reverse interval is disclosed in figure 3 (the first cycle is on the forward link, the second is on the reverse).

Regarding claim 16, each of the forward channels and each of the reverse channels is allocated for a predetermined duration based on the forward interval and the reverse interval, respectively is disclosed in figure 3 (showing using the scheduled, cyclic slots on the forward and reverse frequencies).

Regarding claim 17, the forward interval of the forward cycle and the reverse interval of the reverse cycle are equal in duration is disclosed in figure 3 (both are 8 slots).

Regarding claim 18, the frequency of the forward interval and the frequency of the reverse interval correspond to an integral multiple is disclosed in column 14, lines 64-66 (both intervals are 8 slots, so they are equal; 1 is an integer).

Regarding claim 22, a computer program product including computer program code for allocating wireless channels in a wireless communication network is disclosed in Reese, column 11, lines 27-28 (disclosing software for controlling TDD communications). Computer program code for identifying a first channel dedicated for wireless communication to a subscriber access unit; computer program code for identifying a second channel dedicated for wireless communication to a base station processor is disclosed in Reese, figure 3 (showing 8 channels for receiving, and 8 for

transmitting). Computer program code for scheduling the first channel for wireless communication according to a first cycle; and computer program code for scheduling the second channel for wireless communication according to a second cycle, wherein each channel is dedicated for communication between the wireless communication unit and a single remote wireless unit at a predetermined interval, and wherein the first cycle is out of phase with the second cycle by less than one interval is disclosed in Reese, figure 3 and column 2, lines 23-31 (the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Regarding claim 23, a computer data signal for allocating wireless channels in a wireless communication network is disclosed in Reese, column 11, lines 27-28 (disclosing computer hardware/software for controlling TDD communications). Program code for identifying a first channel dedicated for wireless communication to a subscriber access unit; program code for identifying a second channel dedicated for wireless communication to a base station processor is disclosed in Reese, figure 3 (showing 8 channels for receiving, and 8 for transmitting). Program code for scheduling the first channel for wireless communication according to a first cycle; and program code for scheduling the second channel for wireless communication according to a second cycle, wherein each channel is dedicated for communication between the wireless communication unit and a single remote wireless unit at a predetermined interval, and wherein the first cycle is out of phase with the second cycle by less than one interval is disclosed in Reese, figure 3 and column 2, lines 23-31 (the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Regarding claim 24, a system for allocating wireless channels in a wireless communication network comprising: means for identifying a first channel dedicated for wireless communication to a subscriber access unit; means for identifying a second channel dedicated for wireless communication to a base station processor is disclosed in Reese, figure 3 (showing 8 channels for receiving, and 8 for transmitting). Means for scheduling the first channel for wireless communication according to a first cycle; and means for scheduling the second channel for wireless communication according to a second cycle, wherein each channel is dedicated for communication between the wireless communication unit and a single remote wireless unit at a predetermined interval, and wherein the first cycle is out of phase with the second cycle by less than one interval is disclosed in Reese, figure 3 and column 2, lines 23-31 (the interval is 8 slots; the transmit and receive cycles are out of phase by 3 slots, which is less than 8).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 6, 11, 14, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reese.

Regarding claim 6, the first channel is scheduled by a first scheduler in the base station processor, and the second channel is scheduled by a second scheduler in the subscriber access unit is not specifically disclosed in Reese. However, in column 2, lines 20-31, it is disclosed that the base station must schedule channels with multiple subscriber units, which requires that it have a scheduler. Also, the subscriber units

must schedule transmission in the correct timeslot when corresponding to when a reception occurs, so as to allow sufficient turn around time, see column 2, lines 25-31.

It would have been obvious to one skilled in the art at the time of the invention to have a scheduler in both the base station and in the subscriber unit. The motivation would be to allow the subscriber unit to schedule transmission in response to communications with the base station.

Regarding claim 11, the forward interval and the reverse interval are between 13 and 14 ms out of phase is missing from Reese. However, it is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. Burden of showing criticality is on applicant. In re Mason, 87 F.2d 108, 65 USPQ 242 (CCPA 1937), Marconi Wireless Telegraph Co. v. U.S., 320 U.S.1, 57 USPQ 471 (1943).

Regarding claim 14, the scheduler further comprises a forward scheduler in the base station processor and a reverse scheduler in the subscriber access unit is not specifically disclosed in Reese. However, in column 2, lines 20-31, it is disclosed that the base station must schedule channels with multiple subscriber units, which requires that it have a scheduler. Also, the subscriber units must schedule transmission in the correct timeslot when corresponding to when a reception occurs, so as to allow sufficient turn around time, see column 2, lines 25-31. It would have been obvious to one skilled in the art at the time of the invention to have a scheduler in both the base

station and in the subscriber unit. The motivation would be to allow the subscriber unit to schedule transmission in response to communications with the base station.

Regarding claim 20, the forward interval and the reverse interval are between 13 and 14 ms out of phase is missing from Reese. However, it is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. Burden of showing criticality is on applicant. In re Mason, 87 F.2d 108, 65 USPQ 242 (CCPA 1937), Marconi Wireless Telegraph Co. v. U.S., 320 U.S.1, 57 USPQ 471 (1943).

4. Claims 10, 12, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reese in view of the admitted prior art.

Regarding claim 10, the forward interval and the reverse interval are between 26 and 27 ms is missing from Reese. However, 26.6667 ms is disclosed in the instant specification at page 6, lines 14-16, to be the usual cycle time for a specific wireless protocol. It would have been obvious to one skilled in the art at the time of the invention to use 26.6667 ms as the cycle time. The motivation would be to be able to use a specific wireless protocol.

Regarding claim 12, the forward interval and the reverse interval are an epoch is missing from Reese. However, 26.6667 ms is disclosed in the instant specification at page 6, lines 14-16, to be the usual cycle time for a specific wireless protocol, and that cycle is called an epoch. It would have been obvious to one skilled in the art at the time

of the invention to use an epoch as the cycle time. The motivation would be to be able to use a specific wireless protocol.

Regarding claim 19, the duration of the forward interval and the duration of the reverse interval is between 26 and 27 ms is missing from Reese. However, 26.6667 ms is disclosed in the instant specification at page 6, lines 14-16, to be the usual cycle time for a specific wireless protocol. It would have been obvious to one skilled in the art at the time of the invention to use 26.6667 ms as the cycle time. The motivation would be to be able to use a specific wireless protocol.

Regarding claim 21, the forward interval and the reverse interval are an epoch is missing from Reese. However, 26.6667 ms is disclosed in the instant specification at page 6, lines 14-16, to be the usual cycle time for a specific wireless protocol, and that cycle is called an epoch. It would have been obvious to one skilled in the art at the time of the invention to use an epoch as the cycle time. The motivation would be to be able to use a specific wireless protocol.

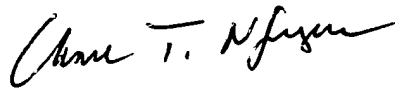
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L. Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CLD
7/12/2006C CD
7/12/06

CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600